REMARKS

Applicants request favorable reconsideration and withdrawal of the rejections set forth in the above-mentioned Office Action in view of the foregoing amendments and the following remarks.

Claims 6-25 are now pending in the application, with claims 6 and 16 being independent claims. Claims 1-5 have been cancelled without prejudice or disclaimer of subject matter. Claims 6-25 are new. Support for the new claims can be found throughout the originally-filed disclosure, including, for example, in the originally filed claims and at page 26, line 19 through page 27, line 9 of the specification. More specifically, the cited portion of the specification discusses how the thickness of the area outside the area in which the fixation roller temperature reaches the Curie temperature when the small-sized paper is continuously passed - which corresponds to an end portion of the heat generation layer - is larger than the penetration depth of the magnetic lines of force - the penetration depth being the "skin depth." As the cited portion of the specification notes, this configuration substantially reduces leakage of magnetic flux to the outside of the heat generating layer, while at the same time keeping the center portion thin to reduce the heat capacity of the heating generation layer. Thus, Applicants submit the new claims include no new matter.

Claims 1-5 were rejected in the Office Action under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention.

Applicants respectfully traverse this rejection. Nevertheless, without conceding the propriety of the rejection and solely to expedite prosecution, Applicants have cancelled claims 1-5, thereby obviating the Section 112 rejection. Further, Applicants submit that language of

claims 1-5 that was found to be vague and indefinite in the Office Action is not recited in new claims 6-25.

Applicants note, however, that the Office Action asserts in the Section 112 rejection that the recitation in claim 1 of the heating element as having a Curie temperature that is lower than a heat-resistant temperature of the image heating apparatus is not known since the heating element itself is a part of the apparatus. While the heating element may be a part of the heating apparatus as noted in the Office Action, this does not preclude the heating apparatus from having a distinct heat-resistant temperature. The image heating apparatus as a whole has some heat-resistant temperature, which could be, for example, the result of an element of the apparatus only having heat-resistance to a certain temperature which is lower than the heat-resistant temperature of the heating element. Thus, the recitation of the heating element's Curie temperature with respect to the heat-resistant temperature of the heating apparatus was not indefinite in previous claim 1. Applicants submit that the same reasoning would apply with respect to the recited image heating apparatus, heat generating member, and Curie temperature in the new claims, and, thus, the Section 112 rejection should not be applied to the new claims.

Claims 1-5 are rejected in the Office Action under 35 U.S.C. § 103(a) as being unpatentable over Ishimura (JP 2000-39797), in view of Yokoyama (JP 9-306652) or Ricoh (JP 3-56960).

Applicants respectfully traverse the rejection. Nevertheless, without conceding the propriety of the rejection and solely to expedite prosecution, Applicants have cancelled claims 1-5 in favor of new claims 6-25. Applicants submit the new claims are patentably distinguishable from the cited references for at least the following reasons.

The Office Action cites Ishimura as disclosing a fixing device that is heated by electromagnetic induction comprising many of the features of Applicants' claimed invention.

The Office Action acknowledges, however, that Ishimura does not disclose a heating element that has a thickness in an area outside an area corresponding to a predetermined size of the material to be heated, which is larger than a thickness in the area corresponding to a predetermined size of the material to be heated. Similarly, Applicants submit that Ishimura does not disclose or suggest a heat generating member having a thickness of the heat generating layer at its center portion that is smaller than a thickness of the heat generating layer at its end portion, as recited in independent claim 6. Further, Ishimura does not disclose or suggest that the thickness of the heat generation layer at its end portion to be larger than a skin depth at the Curie temperature, as recited in independent claim 6. Nor does Ishimura disclose or suggest a thickness of the heat generating layer at its center portion is smaller than a skin depth at the Curie temperature, as recited in independent claim 16. Finally, Ishimura does not disclose or suggest the thickness of the heat generation layer at its end portion to be larger than the thickness of the heat generating layer at its center portion, as recited in independent claim 16.

The Office Action cites Yokoyama as disclosing an electromagnetic heating roller that has a thickness in a sheet passing portion of the heating roller that is less than the thickness in the non-sheet passing portion. Similarly, the Office Action cites Ricoh as disclosing an image fixing device having a heating roller with a thickness of the heating roller in an area outside an area corresponding to a small-sized paper that is larger than a thickness of the heating roller in the area corresponding to a small-sized paper.

Applicants submit, however, that neither Yokoyama nor Ricoh discloses or suggests the thickness of a heat generation layer at an end portion of a heating generating member to be

larger than a skin depth at the Curie temperature, as recited in independent claim 6, or a thickness of a heat generating layer at a central portion to be smaller than a skin depth at the Curie temperature, as recited in independent claim 16. Thus, Yokoyama and Ricoh fail to cure all of the above-noted deficiencies of Ishimura with respect to independent claims 6 and 16.

The Office Action additionally cites Terada et al. (U.S. Patent No. 6,021,303) as disclosing an induction heating fixing device that includes features of Applicants' claimed invention.

Applicants note that Terada et al. discloses a skin depth of the heating roller to be 0.28 mm at room temperature, and a skin depth at a Curie temperature to be 10 times the skin depth at room temperature. Terada et al., col. 9, lines 40-44. Terada et al. further discloses that the heating roller can have a thickness of 1 mm in one example, and a thickness of 0.3 mm in another example. Terada et al., col. 9, lines 44 and 45; col. 13, lines 3 and 4. Thus, Terada et al. discloses the skin depth at the Curie temperature to be 2.8 mm (10 times 0.28 mm), which is greater than the thickness of the heating generating layer, i.e., 0.3 or 1 mm. Accordingly, Terada et al. cannot be taken to teach or suggest a thickness of a heat generation layer at its end portion to be larger than a skin depth at the Curie temperature, as recited in independent claim 6. Further, Terada et al. does not disclose or suggest a thickness of said heat generation layer at its center portion to be smaller than a thickness of said heat generation layer at its end portion, as recited in independent claim 16, nor does Terada et al. disclose or suggest a thickness of said heat generation layer at its end portion is larger than the thickness of said heat generating layer at its center portion, as recited in independent claim 6.

For at least the foregoing reasons, Applicants submit the references cited in the Office Action, whether taken individually or collectively, fail to disclose or suggest the invention recited in independent claims 6 and 16.

The other claims are allowable by virtue of their dependency and in their own right by further defining features of the invention. Individual consideration of the dependent claims is respectfully requested.

In view of the foregoing amendments and remarks, it is respectfully submitted that the pending claims are allowable over the references of record, and that the application is in condition for allowance. Favorable reconsideration and early passage to issue of the application are earnestly solicited.

Any fee required in connection with this paper should be charged to Deposit Account No. 06-1205.

Applicants' undersigned attorney may be reached in the Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to the below listed address.

Respectfully submitted,

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